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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/729,157

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Kia Silverbrook

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SILVERBROOK RESEARCH PTY LTD  
393 DARLING STREET  
BALMAIN, 2041  
AUSTRALIA

EXAMINER

MISLEH, JUSTIN P

ART UNIT

PAPER NUMBER

2622

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/729,157	<b>Applicant(s)</b> SILVERBROOK, KIA	
	<b>Examiner</b> JUSTIN P. MISLEH	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 6 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09112774.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1 page</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 7, 2008 has been entered.

### ***Response to Arguments***

2. Applicant's arguments with respect to Claims 1 – 6 and 8 have been considered but are moot in view of the new grounds of rejection.

3. However, Applicant argues, “The Examiner objected in the final Office Action that the drawings fail to show ‘at least one printhead integrated circuit that is positioned in the outlet to span the printing path, the, or each, printhead integrated circuit defining at least three sets of inlet apertures, each set of inlet apertures being aligned with the respective ink path’.

The Applicant respectfully disagrees that the drawings fail to describe the above-mentioned feature. The Applicant draws attention to Figure 14 where the printhead 102 includes a series of apertures 128 defined therein for carriage of the ink to the front surface of the printhead for printing. This is described from line 29 through to line 33 of page 7 of the specification.

The Applicant respectfully requests withdrawal of the drawing objection.”

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4. The Examiner respectfully disagrees with Applicant's position. Figure 14 does not show or identify the printhead integrated circuit. The claims clearly indicate the importance of the printhead integrated circuit to Applicant's invention. However, none of the drawings clearly show the printhead integrated circuit, the details of the printhead integrated circuit, and how the ink is delivered through the printhead integrated circuit. Therefore, the drawing objection will be maintained. Applicant is reminded that no new matter should be introduced in any amendment to claims, specification, and/or drawings.

### ***Drawings***

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "at least one printhead integrated circuit that is positioned in the outlet to span the printing path, the, or each, printhead integrated circuit defining at least three sets of inlet apertures, each set of inlet apertures being aligned with a respective ink path" limitation must be shown or the feature(s) canceled from the claim(s). **No new matter should be entered.**

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the

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drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the Examiner, the Applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1 – 6 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 5,847,836) in view of Yuen (US 6,347,863 B1).

9. For **Claims 1 and 8**, Suzuki discloses, as shown in figures 1 and 2, a printhead assembly (P) for a camera system (1) having a chassis (not labeled; but clearly shown in figure 1) and a platen assembly (10, 68, 6, 18, etc.) that is mountable on the chassis (again clearly shown in figure 1), the platen assembly (10, 68, 6, 18, etc.) being configured to support passage of a print medium (11) along a printing path (a→, ←b), the print head assembly (P) comprising:

an ink reservoir assembly (5) that is mountable on the chassis (via carriage 4; see figure 1) and defines *a plurality of ink reservoirs* in which respective differently colored inks are received (see Suzuki, column 16, lines 43 – 48; using either an “integrated printhead or by

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combining a plurality of print heads”), the ink reservoir assembly (5) defining an outlet (the total of all “discharge opening”/”discharge nozzles”; see Suzuki, column 15, line 31 – column 16, line 6);

a guide assembly (not specifically shown; but necessary for proper operation) that is positioned in the ink reservoir assembly (5) to define *a plurality of discrete ink paths* that open at the outlet (By using an “integrated printhead”, as indicated in Suzuki, to provide a multi-color print mode; the ink reservoir assembly must be divided into separate sections that each contain ink of a different color. Of course, each one of those different sections must be provided with an ink path that opens at the outlet.); and

at least one *electrical component* (the combined total of all “electrothermal transducer” in the ink reservoir assembly) that is positioned in the outlet ( the total of all “discharge opening”/”discharge nozzles”) to span the printing path , the at least one *electrical component* (the combined total of all “electrothermal transducer” in the ink reservoir assembly) defining *a plurality of sets of inlet apertures* (each color or each section of “integrated printhead” would have a set of inlet apertures or “discharge opening”/”discharge nozzles”), each set of inlet apertures being aligned with a respective ink path (see column 15, line 31 – column 16, line 6).

Suzuki at least discloses a bubblejet type printhead that spans the width of the recording medium. The printhead ink reservoir assembly may be a multi-color printhead that is comprised of a series of adjacent ink reservoirs, each with at least one ink channel and a plurality of corresponding discharge nozzles and discharge openings, or a single integrated ink reservoir with a plurality of ink channels therein each with corresponding discharge nozzles and openings. In either case, the bubble jet print heads require an electrical component, at the base of each ink

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channel, in the discharge nozzles to generate the ink bubbles. Suzuki doesn't specify the details of the electrical component, but incorporates the specific printhead technology by reference, via US Patent 4,558,333 (Sugitani et al.).

Sugitani et al. further specify, as shown in figure 11 and as stated in column 7 (lines 13 – 22), “Although not shown in the drawing, electrodes for input of signals are connected to these heating elements 302. As the connection method to be employed in this case, there may be utilized the multi-layer wiring method recently employed in semiconductor industries, in which electrically insulating films such as of SiO<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub>, polyimide, etc. and electroconductive films such as of Al, Au, etc. are arranged alternately by forming said electroconductive films according to photolithography to constitute a desired wiring pattern” (emphasis added by Examiner). This constitutes the teaching of a printhead integrated circuit for each ink reservoir. Additionally, Sugitani et al. clearly show, in figures 9 – 11, where each ink reservoir includes at least three discrete ink paths (discharging orifices 207) and a corresponding set of at least three inlet apertures (discharging orifices 207), each of the inlet apertures (207) being aligned with a respective ink path. Thus, Suzuki and Sugitani et al. by incorporation disclose at least one printhead integrated circuit that is positioned in the outlet to span the printing path, as claimed.

Albeit, neither Suzuki and Sugitani et al. specifically disclose at least three ink reservoirs or a sponge-like member that is positioned in each of the at least three ink reservoirs to store the ink while inhibiting agitation of ink during general use of the camera system.

On the other hand, Yuen also disclose an ink reservoir assembly with a plurality of ink reservoirs. More specifically, Yuen shows, in figure 3, an ink reservoir assembly (50) with a three ink reservoirs (16, 18, and 20) contained therein. Furthermore, Yuen teaches, as stated in

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column 2 (lines 33 – 36 and 64 – 67), that the ink reservoirs (16, 18, and 20) are completely filled with foam. Therefore, Yuen teaches at least three ink reservoirs and a sponge-like member that is positioned in each of the at least three ink reservoirs to store the ink while inhibiting agitation of ink. Yuen teaches an advantage of the foam in the ink reservoirs is to slowly absorb the ink during a refill so the ink is completely absorbed, thus reducing the possibility of spilling the ink (see column 2, lines 64 – 67, and column 3, line 63 – column 4, lines 13).

Therefore, the Examiner submits, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included foam in the ink reservoirs (as taught by Yuen) in the ink reservoir assembly (disclosed by Suzuki).

10. As for **Claim 2**, Yuen teaches, as shown in figure 3, in which the ink reservoir assembly defines three ink reservoirs (16, 18, and 20) and the guide assembly defines three discrete ink paths (side internal walls 58).

11. As for **Claim 3**, Suzuki discloses, as indicated above, that the printhead maybe single integrated multicolor ink reservoir assembly that is elongate to span the printing path where the printhead integrated circuits are mounted in the opening of the ink reservoir assembly.

Yuen further teaches, as shown in figure 3, the ink reservoir assembly including a base member (lower part of cartridge; e.g., 14 in figure 1) and a cover member (upper part of cartridge; e.g., 12 in figure 1), the cover member (12) having a roof wall, a pair of opposed side walls and a pair of spaced inner walls (clearly shown in figure 3), the side walls and the inner walls depending from the roof wall and being generally parallel to each other (see arrangement of side internal walls 58) and the base member having a floor and a pair of opposed end walls and defining an opening (clearly shown in figure 3), the guide assembly being interposed



between lower ends of the inner walls and the floor (The Examiner considers the guide assembly to correspond to the side internal walls 58 residing in the base member, e.g., 14 in figure 1) again. Also, see figure 3).

The Examiner respectfully notes that Yuen, when combined with Suzuki (and Sugitani et al. by reference), would result in a printhead that is elongated to span the printing path. Furthermore, the guide assembly and each individual ink reservoir would additionally be elongated to span the printing path. Nevertheless, the side profile shown in Yuen's figure 3 would be similar to the side profile of the elongated printhead as a result of the combination.

12. As for **Claim 4**, Yuen clearly shows in figure 3, wherein in which the guide assembly includes a pair of guide walls (side internal walls 58 residing in the base member) that extend from respective lower ends (portion where cover member 12 and base member 14 join together) of the inner walls inwardly towards the elongate opening to define the three distinct ink paths that terminate at respective sets of inlet apertures of the printhead integrated circuits (The Examiner considers the fact that the guide walls extend from the lower end of the cover member 12 to the lower end of the base member 14 to correspond to the "inwardly towards the elongate opening". The Examiner respectfully notes that the claim language does not specify that the guide walls must be non-parallel with respect to each other).

13. As for **Claim 5**, neither Suzuki nor Yuen specify the material or method of construction of the printhead ink reservoir assembly. While Yuen shows, in figure 3, a molded assembly; Yuen doesn't specify a plastics material.

However, the Examiner respectfully takes **Official Notice** (MPEP § 2144.03) that both the concepts and advantages of molding printhead cartridges out of a plastics material are well

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known and expected in the art. At the time the invention was made, it would have been obvious to one with ordinary skill in the art to have molded the printhead cartridges out of a plastics material for the sake of simplicity, cost, durability, and strength.

14. As for **Claim 6**, neither Suzuki, nor Sugitani et al., nor Yuen specify the material or method of construction of the printhead ink reservoir assembly. While Sugitani et al. show the particulars of the nozzles (inlet apertures); Sugitani et al. doesn't specify a number of air inlet openings that are treated to be hydrophobic to permit the ingress of air into the ink reservoirs as ink is fed from the ink reservoirs and to inhibit the egress of ink.

However, the Examiner respectfully takes **Official Notice** (MPEP § 2144.03) that both the concepts and advantages of incorporating a number of air inlet openings that are treated to be hydrophobic are well known and expected in the art. At the time the invention was made, it would have been obvious to one with ordinary skill in the art to have treated a number of air inlet openings that are treated to be hydrophobic for the sake of reducing corrosion and enhancing the ability to clean and maintain the printhead.

#### ***Cited Prior Art***

15. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure for the following reasons:

- **Tanaka et al. (US 5,621,446)** discloses an ink reservoir assembly with a ink reservoir having a sponge-like material therein and a printhead integrated circuit in the outlet.
- **Allen et al. (US 5,469,199)** discloses a page-width integrated printhead with a page-width printhead integrated circuit.

***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lin Ye can be reached on 571.272.7372. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**/Justin P. Misleh/  
Examiner, Art Unit 2622  
July 1, 2008**